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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,868	08/18/2003	Vinh Thanh Vu	125-001US	3334
22897 7590 03/25/2010				
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ART UNIT		PAPER NUMBER		
2832				
NOTIFICATION DATE		DELIVERY MODE		
03/25/2010		ELECTRONIC		

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte VINH THANH VU

Appeal 2009-007579
Application 10/642,868¹
Technology Center 2800

Decided: March 23, 2010

Before JOHN C. MARTIN, SCOTT R. BOALICK, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

BOALICK, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Application filed August 18, 2003. The real party in interest is the inventor, Vinh Thanh Vu.

This is an appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1-22 and 26-32.² Claims 23-25 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF THE CASE

Appellant's invention relates to a vibration-control platform that includes a bottom plate having three or more wells, a plurality of vibration-control elements (such as, for example, rubber balls) located in the wells, and a top platform. (Spec. Abstract.)

Claims 1 and 11 are exemplary:

1. An article for use with spherical vibration-control elements, wherein said article comprises:
a plate having a number, n , of spaced wells arranged in a two-dimensional array, wherein:
 - (i) said two-dimensional array comprises at least two rows of said spaced wells with a minimum of three wells in each row;
 - (ii) said wells are suitably sized so that when a well receives said spherical vibration control element, said vibration control element contacts said plate at substantially every point along a perimeter of said well; and
 - (iii) said wells underlie said spherical vibration control elements, and further wherein, in use, the only constraint to unrestricted lateral movement of said spherical vibration control elements are said wells.
11. The article of claim 9 wherein there are fewer of said vibration-control elements than said n wells.

² Claim 32 depends from cancelled claim 24. However, both Appellant and the Examiner treat claim 32 as if it depends from independent claim 26 (*see, e.g.,* App. Br. 22; Ans. 9). For the purpose of administrative efficiency, we also will treat claim 32 as if it depends from independent claim 26 rather than cancelled claim 24. However, this error will require correction should there be further prosecution before the Examiner.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Huyett	6,230,460 B1	May 15, 2001
Van Goubergen	5,330,165	July 19, 1994
Bach	3,679,159	July 25, 1972

Claims 1-3, 5 and 7-14 stand rejected under 35 U.S.C. § 103(a) as being obvious over Huyett and Van Goubergen.

Claims 4 and 6 stand rejected under 35 U.S.C. § 103(a) as being obvious over Huyett, Van Goubergen and Bach.

Claims 15-20 and 26-32 stand rejected under 35 U.S.C. § 103(a) as being obvious over Van Goubergen.

Claims 21 and 22 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bach and Van Goubergen.

ISSUES

With respect to independent claim 1, Appellant argues that the combination of Huyett and Van Goubergen “does not disclose what is recited in the pending claims and/or the combination is inappropriate.” (Br. 11.)

With respect to dependent claim 10, Appellant argues that the combination of Huyett and Van Goubergen does not teach or suggest the limitations “said vibration control element contacts said plate at substantially every point along a perimeter of said well”, “the only constraint to unrestricted lateral movement of said spherical vibration control elements are said wells” and “wherein, when said vibration-control elements are

disposed in said wells, they do not abut a bottom of said wells” (Br. 16-18) and that “because the vibration control approaches taken by Van Goubergen and Huyett are incompatible with one another, it is inappropriate to ‘combine’ them” (Br. 16).

With respect to dependent claim 11, Appellant argues that the combination of Huyett and Van Goubergen does not teach or suggest the limitation “wherein there are fewer of said vibration-control elements than said *n* wells” because neither reference provides a disclosure of placing vibration-control elements in only some wells. (Br. 19.) Appellant presents similar arguments with respect to independent claims 15, 21 and 26, which recite similar limitations. (Br. 20-24.)

Appellant’s arguments present the following issue:

Has the Examiner erred in rejecting claims 1-22 and 26-32 under 35 U.S.C. § 103(a)?

The resolution of this issue turns on the following subsidiary issues:

1. Has the Examiner erred in finding that the combination of Huyett and Van Goubergen teaches or suggests all the limitations of claim 1?
2. Has the Examiner erred in finding that the combination of Huyett and Van Goubergen teaches or suggests “said vibration control element contacts said plate at substantially every point along a perimeter of said well”?
3. Has the Examiner erred in finding that the combination of Huyett and Van Goubergen teaches or suggests “the only constraint to unrestricted lateral movement of said spherical vibration control elements are said wells”?

4. Has the Examiner erred in finding that the combination of Huyett and Van Goubergen teaches or suggests “wherein, when said vibration-control elements are disposed in said wells, they do not abut a bottom of said wells”?

5. Has the Examiner erred in combining Huyett and Van Goubergen?

6. Has the Examiner erred in finding that the combination of Huyett and Van Goubergen teaches or suggests “wherein there are fewer of said vibration-control elements than said *n* wells”?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

Huyett

1. Huyett relates to a “resilient flooring system including a number of laterally spaced, shock absorbers for positioning upon a fixed subfloor.” (Abstract.) For example, such flooring systems are used by professional dance companies (col. 1, ll. 9-12) to avoid “hard and soft spots which can destroy a dancer’s rhythm and lead to fatigue or injury” (col. 1, ll. 15-17).
2. The flooring subsystem 10 includes multiple laterally spaced shock absorbers 16. (Col. 2, ll. 25-27; fig. 1.) “Each shock absorber 16 has a sole plate 20 and a top plate 22 retained in a spaced-apart relationship by a plurality of rubber spheres 24.” (Col. 2, ll. 49-51; fig. 2.) A cup-shaped socket 26 is located in the sole plate 20 to retain the rubber spheres 24. (Col. 2, ll. 51-53; fig. 2.) To provide a “snug

fit,” the radius of curvature of the spheres 24 is the same as that of the sockets 26. (Col. 2, ll. 61-65.)

3. Figure 1 illustrates that the sole plate 20 includes a one-dimensional array of spheres 24. Huyett also discloses that “the number, location and dimensions of the elements of the shock absorbers 16 may be varied to control the resiliency of flooring system 10.” (Col. 3, ll. 52-55.)

Van Goubergen

4. Van Goubergen relates to a “vibration damper.” (Col. 1, l. 6.) An embodiment of Figure 1 includes a layer of elastomeric bodies 1 between two elastomeric plate elements 2. (Col. 5, ll. 3-6; fig. 1.) The elastomeric bodies 1 are spherical and seated in recesses 4 of the plate elements 2. (Col. 5, ll. 8-10.) The elastomeric bodies or spheres 1 are connected by thin bands or strips of material 6 to form a mat. (Col. 5, ll. 25-28; fig. 1.) Figure 1 illustrates that each of the recesses 4 in the bottom plate element 2 is occupied by an elastomeric body 1.
5. In an embodiment of Figure 2, plate elements 2 include polyhedron-shaped recesses 4a for seating elastomeric bodies 1. (Col. 5, ll. 45-47; fig. 2.) For this embodiment, the elastomeric bodies 1 contact the recesses 4a at “spaced points of contact 3.” (Col. 5, ll. 47-48.) Figure 2 illustrates that the elastomeric bodies 1 do not contact the bottoms of the recesses 4a. Figure 2 also illustrates that each of the recesses 4a is occupied by an elastomeric body 1.

6. Figures 3 to 5 illustrate that each of the recesses 4, 4c and 4d, respectively, is occupied by an elastomeric body 1. Figures 6 to 8 illustrate that each of the recesses (unreferenced) in the bottom dish 2e (also referred to as plate elements (*see e.g.*, col. 5, ll. 11-12)) is occupied by an elastomeric body 1. Figure 9 also illustrates that each of the recesses 14 in a second plate 13 is occupied by a conical or pyramidal projection 11. (Col. 6, ll. 33-35.) Likewise, Figures 10 and 12 illustrate each of the recesses (unreferenced) in the bottom dish 2 is occupied by an elastomeric body 1.
7. Figure 11 illustrates a vibration damper placed under the feet of a machine 16. (Col. 7, ll. 4-6; fig. 11.) Figure 11 also illustrates a vibration damper with a two-dimensional array (e.g., shown as a 5 × 6 array) of elastomeric bodies seated between two elastomeric plate elements.

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 415, and discussed circumstances in which a patent might be determined to be obvious.

In particular, the Supreme Court emphasized that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417.

ANALYSIS

We conclude that the Examiner has not erred in rejecting claims 1-10 and 12-14 under 35 U.S.C. § 103(a). However, we conclude that the Examiner has erred in rejecting claims 11, 15-22, and 26-32 under 35 U.S.C. § 103(a).

Claims 1-3, 5, 7-9 and 12-14

We are not convinced by Appellant’s arguments (Br. 11-14) that the combination of Huyett and Van Goubergen does not teach or suggest all the limitations of claim 1³ and that the Examiner improperly combined the applied references.

³ Appellant argues claims 2, 3, 5, 7-9 and 12-14 together as a group. (Br. 14.) Therefore, we select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner found that Huyett discloses all the features of claim 1 except the limitation “said two-dimensional array comprises at least two rows of said spaced wells with a minimum of three wells in each row.” (Ans. 4-5.) The Examiner cited Van Goubergen for the disclosure of a vibration damper with a two-dimensional array of elastomeric bodies 1. (Ans. 5; *see* FF 7.) The Examiner concluded that “[i]t would have been obvious . . . to employ the Van Goubergen two-dimensional array with the Huyett design because the two-dimensional array would help distribute the load applied to the system throughout the whole contact surface, in this manner providing for economical savings.” (Ans. 5-6.) We agree with the Examiner.

Huyett relates to a flooring subsystem 10 with multiple laterally spaced shock absorbers 16 including a sole plate 20 and a cup-shaped socket 26 located in the sole plate 20 to retain a one-dimensional array of rubber spheres 24. (FF 2.) Huyett also teaches that the dimensions of the shock absorbers 16 can be varied to control the resiliency of flooring subsystem 10. (FF 3.) Van Goubergen relates to a vibration damper including a layer of elastomeric bodies 1 between two elastomeric plate elements 2. (FF 4.) Van Goubergen teaches that the vibration damper can be a two-dimensional array (e.g., 5 × 6) of elastomeric bodies 1 seated in an elastomeric plate element 2. (FF 7.) In other words, Van Goubergen teaches the limitation “said two-dimensional array comprises at least two rows of said spaced wells with a minimum of three wells in each row.”

Combining Huyett with Van Goubergen is no more than the simple substitution of Van Goubergen’s known two-dimensional array of elastomeric bodies 1 seated in elastomeric plate elements 2 for Huyett’s

known one-dimensional array of rubber spheres 24 seated in sole plate 20, with no unexpected results. *See KSR*, 550 U.S. at 417. Appellant has not presented any convincing arguments or evidence that the Examiner erred in combining Huyett with Van Goubergen.

Therefore, the Examiner has not erred in combining the applied references or in finding that the combination of Huyett and Van Goubergen teaches or suggests all the features of claim 1.

We conclude that the Examiner has not erred in rejecting claim 1 under 35 U.S.C. § 103(a). Claims 2, 3, 5, 7-9, and 12-14 were not argued separately and fall with claim 1.

Claim 10

We are not convinced by Appellant's arguments (Br. 14-18) regarding Huyett and Van Goubergen.

Huyett relates to a flooring subsystem 10 with multiple laterally spaced shock absorbers 16, including a sole plate 20 and a cup-shaped socket 26 located in the sole plate 20 to provide a "snug fit" for the rubber spheres 24. (FF 2.) Van Goubergen relates to a vibration damper, including a layer of elastomeric bodies 1 between two elastomeric plate elements 2 (FF 4) in which the elastomeric bodies 1 are seated in polyhedron-shaped recesses 4a to provide spaced points of contact without contacting the bottoms of the recesses 4a (FF 5). In other words, Van Goubergen teaches the limitation "wherein, when said vibration-control elements are disposed in said wells, they do not abut a bottom of said wells."

Combining Huyett with Van Goubergen is no more than the simple substitution of Van Goubergen's known configuration of seating elastomeric

bodies 1 in polyhedron-shaped recesses 4a for Huyett's known configuration of snugly fitting rubber spheres 24 into cup shaped-sockets 26, with no unexpected results. *See KSR*, 550 U.S. at 417. Appellant has not presented any convincing arguments or evidence that the Examiner erred in combining Huyett with Van Goubergen.

Appellant argues that Huyett does not teach or suggest that the vibration-control element "does not abut a bottom of the wells." (Br. 16.) However, Huyett is not relied upon for teaching or suggesting this feature. Instead, as discussed previously, Van Goubergen teaches or suggests this feature.

Next, Appellant argues that Van Goubergen does not teach or suggest that the vibration-control elements "contact[] substantially every point along the perimeter of the well." (Br. 16.) Van Goubergen teaches seating elastomeric bodies 1 in polyhedron-shaped recesses 4a to provide for spaced points of contact without contacting the bottoms of the recesses 4a. (FF 5.) A polyhedron having many sides of a relatively short length would approximate a circle and, as such, the spaced points of contact between the surfaces of the polyhedron-shaped recesses 4a correspond to the limitation "said vibration control element contacts said plate at substantially every point along a perimeter of said well."

Furthermore, Appellant argues that Van Goubergen does not teach or suggest "the only constraint to unrestricted lateral motion of the . . . [vibration-control elements] is the wells" (Br. 16) because Van Goubergen discloses that the elastomeric bodies 1 are adjoined by thin bands or strips of material 6. (Br. 17). However, Van Goubergen is not relied upon for teaching or suggesting this feature. Huyett teaches that the rubber

spheres 24 are seated into cup shaped-sockets 26 with a “snug fit,” which teaches or suggests that the rubber spheres 24 are restrained from lateral motion. (*See* FF 2.)

Last, Appellant argues that “the vibration control approaches taken by Van Goubergen and Huyett are incompatible with one another” (Br. 16) because “Huyett teaches a ‘snug fit’ and Van Goubergen favors ‘point contact’” (Br. 17). However, as discussed previously, combining Huyett with Van Goubergen is no more than the simple substitution of one known element for another, with no unexpected results.

Therefore, the Examiner has not erred in combining the applied references or in finding that the combination of Huyett and Van Goubergen teaches or suggests the limitations “said vibration control element contacts said plate at substantially every point along a perimeter of said well,” “the only constraint to unrestricted lateral movement of said spherical vibration control elements are said wells” and “wherein, when said vibration-control elements are disposed in said wells, they do not abut a bottom of said wells.” We conclude that the Examiner has not erred in rejecting claim 10 under 35 U.S.C. § 103(a).

Claims 11, 15-22 and 26-32

We are, however, convinced by Appellant’s arguments (Br. 18-20) that the combination of Huyett and Van Goubergen does not teach or suggest “wherein there are fewer of said vibration-control elements than said *n* wells,” as recited in dependent claim 11.

The Examiner concluded that claim 11 would have been obvious because “it would have been an obvious matter of design choice to employ a

desired amount of wells and/or vibration-control elements . . . [and] it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.” (Ans. 6.) We do not agree.

Huyett teaches a resilient flooring system that avoids “soft spots” in the flooring. (FF 1.) In other words, Huyett teaches or suggests that to avoid such “soft spots,” *each* of the cup shaped-sockets 26 in the sole plate 20 contains a rubber sphere 24. (See FF 1-2.) Similarly, each of Van Goubergen’s embodiments teaches that *each* recess in the bottom plate element 2 (or bottom dish 2e) contains an elastomeric body 1. (FF 4-6.) We do not find any teaching or suggestion of a well that does not have a vibration-control element in Huyett or Van Goubergen, either alone or in combination.

Therefore, the Examiner has erred in finding that the combination of Huyett and Van Goubergen teaches or suggests “wherein there are fewer of said vibration-control elements than said *n* wells,” as recited in dependent claim 11. We conclude that the Examiner has erred in rejecting claim 11 under 35 U.S.C. § 103(a).

Independent claims 15 and 26 recite limitations similar to those discussed with respect to dependent claim 11, and the Examiner has erred in rejecting claims 15 and 26, as well as claims 16-20 and 27-32, which depend from claims 15 and 26, under 35 U.S.C. § 103(a) for the reasons previously discussed with respect to claim 11.

Independent claim 21 recites limitations similar to those discussed with respect to dependent claim 11, and the Examiner has erred in rejecting claim 21, as well as claim 22, which depends from claim 21, under 35

U.S.C. § 103(a), for the reasons previously discussed with respect to claim 11. Bach does not cure the above-noted deficiencies of Van Goubergen.

Claims 4 and 6

Although Appellant nominally argues the rejection of dependent claims 4 and 6 separately (Br. 20), the arguments presented do not point out with particularity or explain why the limitations of the dependent claims are separately patentable. Instead, Appellant summarily alleges that these claims are allowable because “Bach *et al.* does not provide any disclosure that, in combination with Huyett and Van Goubergen, would obviate claim 1. As a consequence, claims 4 and 6 are allowable based on their dependence on claim 1.” (Br. 20.) Therefore, we will sustain the rejection of claims 4 and 6 for the reasons discussed with respect to independent claim 1, from which claims 4 and 6 depend.

CONCLUSION

Based on the findings of fact and analysis above, we conclude that:

- (1) the Examiner has not erred in rejecting claims 1-10 and 12-14 under 35 U.S.C. § 103(a);
- (2) the Examiner has erred in rejecting claims 11, 15-22 and 26-32 under 35 U.S.C. § 103(a).

DECISION

The rejection of claims 1-10 and 12-14 under 35 U.S.C. § 103(a) is affirmed.

The rejection of claims 11, 15-22 and 26-32 under 35 U.S.C. § 103(a) is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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